

# 34 Lecture - CS301

## Important Mcqs

1. Which of the following is not a property of an equivalence relation?

- a. Reflexivity
- b. Symmetry
- c. Transitivity
- d. Antisymmetry

Answer: d. Antisymmetry

2. Which of the following is an example of an equivalence relation?

- a. Greater than
- b. Less than
- c. Equality
- d. Addition

Answer: c. Equality

3. An equivalence class is a set of elements that:

- a. Have the same value
- b. Are not related to each other
- c. Have the same property
- d. Have different properties

Answer: a. Have the same value

4. Which of the following is an example of a relation that is not an equivalence relation?

- a. Greater than or equal to
- b. Less than or equal to
- c. Not equal to
- d. None of the above

Answer: c. Not equal to

5. If  $xRy$  and  $yRz$ , then  $xRz$  is an example of which property of an equivalence relation?

- a. Reflexivity
- b. Symmetry
- c. Transitivity
- d. None of the above

Answer: c. Transitivity

6. Which of the following is an example of a partition of a set?

- a.  $\{1, 2, 3\}, \{4, 5\}, \{6, 7, 8\}$
- b.  $\{1, 3, 5\}, \{2, 4, 6\}$
- c.  $\{a, b, c\}, \{d, e\}$
- d. All of the above

Answer: a.  $\{1, 2, 3\}, \{4, 5\}, \{6, 7, 8\}$

7. An equivalence relation can be defined on which of the following sets?

- a. Integers

- b. Rational numbers
- c. Real numbers
- d. All of the above

Answer: d. All of the above

8. Which of the following is a common use of equivalence relations in computer science?
- a. Database design
  - b. Sorting algorithms
  - c. Graph theory
  - d. Cryptography

Answer: a. Database design

9. Which of the following is an example of a non-trivial equivalence relation?
- a. Equality
  - b. Greater than
  - c. Less than
  - d. Congruence modulo  $n$

Answer: d. Congruence modulo  $n$

10. Which of the following is an example of an equivalence relation on a set of colors?
- a. Lighter than
  - b. Darker than
  - c. Same hue
  - d. None of the above

Answer: c. Same hue